

CLAIMS

1. A radio communication system comprising:

5 a plurality of base station apparatuses that send
a transmit power control command instructing an increase
or decrease of transmit power; and

a plurality of communication terminal apparatuses
that control transmit power according to said transmit
power control command,

10 wherein said communication terminal apparatus
comprises:

a reception section that receives said transmit
power control command;

15 a selection section that selects a main base station
apparatus having the best channel condition up to/from
the own apparatus based on a history of said received
transmit power control commands; and

20 a transmission section that transmits a signal using
an error coding scheme and modulation scheme notified
from the selected main base station apparatus, and

said base station apparatus comprises:

25 an authorization section that authorizes the
communication terminal apparatus having the maximum
reception quality out of the communication terminal
apparatuses which have selected the own apparatus as the
main base station apparatus to transmit a signal;

a determining section that determines an error

coding scheme and modulation scheme used by the transmission authorized communication terminal apparatus authorized to transmit a signal; and

5 a transmission section that transmits the determined error coding scheme and modulation scheme to said transmission authorized communication terminal apparatus.

2. The radio communication system according to claim 1,
10 wherein said communication terminal apparatus further comprises a calculation section that calculates extra transmit power by subtracting the transmit power determined according to said transmit power control command from maximum transmittable transmit power, and
15 said base station apparatus further comprises an estimation section that estimates reception quality corresponding to said communication terminal apparatus using said extra transmit power.

20 3. A communication terminal apparatus comprising:

a reception section that receives transmit power control commands sent from a plurality of base station apparatuses;

a selection section that selects a main base station
25 apparatus having the best channel condition up to/from the own apparatus based on a history of said received transmit power control commands; and

a transmission section that transmits base station selection information that notifies the selected main base station apparatus.

5 4. The communication terminal apparatus according to
claim 3, wherein said selection section stores said
transmit power control commands for a predetermined time
and selects a base station apparatus having the largest
difference obtained by subtracting the number of transmit
10 power control commands instructing an increase from the
number of transmit power control commands instructing
a decrease as the main base station apparatus.

5. The communication terminal apparatus according to
15 claim 3, wherein said selection section stores said
transmit power control commands for a predetermined time
and selects a base station apparatus having the largest
proportion of the number of transmit power control
commands instructing a decrease in the number of transmit
20 power control commands stored as the main base station
apparatus.

6. The communication terminal apparatus according to
claim 3, further comprising:
25 a control section that determines transmit power
according to said transmit power control command; and
a calculation section that calculates extra transmit

power by subtracting the determined transmit power from the maximum transmit power transmittable from the own apparatus.

5 7. A base station apparatus comprising:

a reception section that receives base station selection information sent by a communication terminal apparatus which notifies a main base station apparatus having the best channel condition up to/from said
10 communication terminal apparatus;

an authorization section that authorizes the communication terminal apparatus having the maximum reception quality out of the communication terminal apparatuses which have selected the own apparatus as the
15 main base station apparatus to transmit a signal;

a determining section that determines an error coding scheme and modulation scheme used by the transmission authorized communication terminal apparatus which has been authorized to transmit a signal;
20 and

a transmission section that transmits the determined error coding scheme and modulation scheme to said transmission authorized communication terminal apparatus.

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8. The base station apparatus according to claim 7, further comprising an estimation section that estimates reception

quality corresponding to said transmission authorized communication terminal apparatus using extra transmit power obtained by subtracting actual transmit power from the maximum transmit power transmittable by said

5 transmission authorized communication terminal apparatus,

wherein said determining section determines an error coding scheme and modulation scheme according to the estimated reception quality.

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9. The base station apparatus according to claim 8, wherein said determining section determines an error coding scheme and modulation scheme according to the estimated reception quality and handover information indicating
15 whether said transmission authorized communication terminal apparatus is in the process of soft handover or not.

10. The base station apparatus according to claim 8,
20 wherein said determining section comprises a prediction section that predicts a variation of interference power using extra transmit power of said communication terminal apparatus other than said transmission authorized communication terminal apparatus, and

25 determines an error coding scheme and modulation scheme according to the estimated reception quality and the predicted variation of interference power.

11. A radio communication method used in a communication terminal apparatus, comprising:

5 a step of receiving transmit power control commands transmitted from a plurality of base station apparatuses;

a step of selecting a main base station apparatus having the best channel condition up to/from said communication terminal apparatus based on the history of said received transmit power control commands; and

10 a step of transmitting base station selection information notifying the selected main base station apparatus.

12. A radio communication method used in a base station apparatus, comprising:

15 a step of receiving base station selection information transmitted by a communication terminal apparatus which notifies a main base station apparatus having the best channel condition up to/from said communication terminal apparatus;

20 a step of authorizing the communication terminal apparatus having the maximum reception quality out of the communication terminal apparatuses which have selected said base station apparatus as the main base station apparatus to transmit a signal;

a step of determining an error coding scheme and modulation scheme used by the transmission authorized

communication terminal apparatus which has been
authorized to transmit a signal; and

a step of transmitting the determined error coding
scheme and modulation scheme to said transmission
5 authorized communication terminal apparatus.